RESEARCH METHODOLOGY

The data for this research study is collected open source projects from OSS repository. This data collection is done from OSS projects of different categories including business & enterprise, communication, development, home & education, graphics, science & engineering, system administration, and security utilities.

Patch generation is one of the important tasks in software maintenance I,e on debugging activities such as fault localization and prioritization. In practice, debugging cannot be completed without patch generation even if a fault is accurately localized or efficiently prioritized.

Patch generation is recognized as an essential task in software development since most contemporary software systems inevitably contain bugs that need to be fixed. As the size and complexity of software systems get larger and higher, significantly more number of bugs are found and reported. Naturally, the corresponding cost for resolving the bugs is rapidly increasing.

PROFIX Pattern is an automated technique for patch generations which lead novel pattern-based repair technique learned from human-written patches

Step-1:

This technique can outperform existing techniques based on random mutation with respect to patch quality and readability.

Step-2:

PROFIX Pattern proposes a semantic-based approach to fix pattern mining for supporting the pattern-based repair technique.

Step-3:

PROFIX Pattern proposes a bug classification method by this method efficiency of the repair technique can be improved if it can figure out the type of a given bug upfront.